

ABSTRACT

A method and apparatus are provided for injecting medicine from a pre-filled container into a patient through an injection needle. After use the needle is automatically shielded so that the contaminated needle is protected to prevent inadvertent contact with the needle. The device operates by pumping medicine out of the vial into a transfer chamber. The medicine is expelled from the transfer chamber into the patient during an injection stroke. At the end of the injection stroke, the needle is released for retraction, and the spring then retracts the needle to shield the needle. Preferably, the device includes an injector assembly and a vial holder assembly. The injector assembly has a needle retainer for releasably retaining the needle in a projecting position against the bias of a spring. The vial holder assembly is attachable with the injector assembly and is operable to transfer the medicine out of the vial and into the transfer chamber to prepare the device for an injection.

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